Work Order ID 112319

112319

February-13-14 1:12:03 PM

Item ID: D4093-1 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Bracket

Start Date: 30/01/2014 **Start Qty:** 20.00 *20*

Required Date: 30/01/2014 **Req'd Qty:** 20.00 *20*

Cust Item ID:

Customer:

Reference:

Approvals: **Process Plan:** AA **Date:** 14-02-13 **Tooling:** _____ **Date:** _____ **Run Start** *NR1*

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr / **Revision Nbr**									
D4093 / D									
110		0.00							
110									
Waterjet	**Memo**	0.00							
FLOW CNC Waterjet	CUT AS DWG DWG REV: _____ PROG REV: A ISSUE PC PO23011 POSSIBLE SUPPLIER: LOEBSACK WATERJET ***HOLES WILL BE MADE ON MILLING*** ****DEBURR****								
115	Receive & Inspect for Damage & Mat'l Certs	0.00							
115									
Packaging	**Memo**	0.00							
Packaging									

MG 2/18/14

2/4/14 (20)

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

Item ID: D4093-1 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Bracket

Start Date: 30/01/2014 **Start Qty:** 20.00 *20*
Required Date: 30/01/2014 **Req'd Qty:** 20.00 *20*
Reference:

Cust Item ID:
Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
125	QC6- Inspect dimensions to drawing	0.00	DAS 27 9-89			20			
125									
QC	**Memo**	0.00 14/4/13							
Quality Control									
126		0.00				14/03/03			
126									
Small Fab	**Memo**	0.00	DAS 30 9-89	N/A					
Small Fab	DEBURR A/R								
130		0.00							
130						20	0		14-05-04
Mill Conv	**Memo**	0.00							
Conventional Milling Machine	DRILL AND C'SINK AS PER DWG								

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function

☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence

☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge

☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled

☐ Other

Work Order ID 112319

February-13-14 1:12:03 PM

112319

Item ID: D4093-1 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Bracket

Start Date: 30/01/2014 **Start Qty:** 20.00 *20*

Required Date: 30/01/2014 **Req'd Qty:** 20.00 *20*

Reference:

Cust Item ID:

Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
132	QC2- Inspect parts off machine FAI/FAIB	0.00				20	0		14-05-03
132									
QC	**Memo**	0.00							
Quality Control									
135	QC8- Inspect parts - second check	0.00							DAS 08 9-89
135						20	0		
QC	**Memo**	0.00							
Quality Control									
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140						20	0	14555	
HandFinish	**Memo**	0.00							
Hand Finishing									

14/05/06

DQA: _____ Date: _____

DART AEROSPACE

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
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☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other _____

Work Order ID 112319

February-13-14 1:12:03 PM

112319

Item ID: D4093-1 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Bracket **Stop** *NS2*

Start Date: 30/01/2014 **Start Qty:** 20.00 *20*

Required Date: 30/01/2014 **Req'd Qty:** 20.00 *20*

Reference:

Cust Item ID:

Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC7-Inspect Chemical Conversion Coat	0.00							
160						20			14/05/06
QC	**Memo**	0.00							
Quality Control									
170	Identify as per dwg & Stock Location: ST270	0.00							
170						20X	DAS 28 9-89		MAY 0 6 2023
Packaging	**Memo**	0.00							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
180						MCJ	14-05-08		
QC	**Memo**	0.00							
Quality Control									

14-05-07

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
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☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
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General

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☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
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☐ Drawing
☐ Drill Holes
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☐ Misread
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☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

Picklist Print

February-13-14 1:12:08 PM

Work Order ID: 112319

112319

Parent Item: D4093-1

D4093-1

Parent Item Name: Bracket

Start Date: 30/01/2014 **Required Date:** 30/01/2014

Start Qty: 20.00 **Required Qty:** 20.00

Comments: Ipp Rev:A New Issue 10-05-31 JLM Verified By:DD IPP
REV:B AS PER REV C 11.09.28 JLM VERIFIED BY:DD IPP REV:C
12.10.31 AS PER DWG REV.C DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4093-1P		Purchased	No				Each	0.0000		20			
D4093-1P Bracket									**				

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

- ☐ Bending
- ☐ Centre Not Concentric
- ☐ Cracks
- ☐ Crimp/Kink/Ripple/Wave
- ☐ Cuffs
- ☐ Crushing
- ☐ Heat Treat
- ☐ Inspection Strip in Tube
- ☐ Marks/Chatter
- ☐ Turning Sequence
- ☐ Wave/Twist in Tube

General

- ☐ Bend
- ☐ BOM/Route
- ☐ Broken/Damage/Defect
- ☐ Burrs
- ☐ Contamination
- ☐ Countersink
- ☐ Cut Too Short
- ☐ Drawing
- ☐ Drill Holes
- ☐ Finish
- ☐ Fit/Function
- ☐ Folio/Program
- ☐ Grain
- ☐ Hardware
- ☐ Inspection Incomplete/Unqualified
- ☐ Instructions Incomplete/Unclear
- ☐ Misaligned/off center
- ☐ Mislabeled
- ☐ Misread
- ☐ Off-set
- ☐ Out of Calibration
- ☐ Out of Sequence
- ☐ Outside Dimensions
- ☐ Over/Under tolerance
- ☐ Part Incorrect
- ☐ Part Lost/Missing
- ☐ Part Moved
- ☐ Positioned Wrong
- ☐ Power Loss/Surge
- ☐ Pressure/Forced
- ☐ Set-up
- ☐ Temperature/Cure
- ☐ Weld
- ☐ Wrong Stock Pulled
- ☐ Other

DART AEROSPACE LTD	Work Order:	112319
Description: Bracket	Part Number:	D4093-1
Inspection Dwg: D4093 **Rev:** D		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

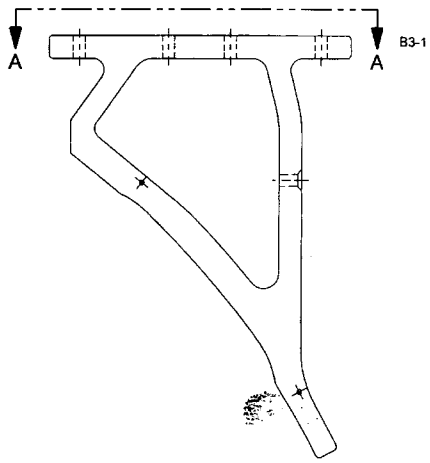
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.92	+/-0.030	0.93	✓		SLm-05	
3.85	+/-0.030	3.9	✓			
4.03	+/-0.030	4.07	✓			
5.03	+/-0.030	502	✓			
0.36	+/-0.030	0.37	✓			
0.76	+/-0.030	076	✓			
4.82	+/-0.030	4.82	✓			
0.38	+/-0.030	0.37	✓			
4.20	+/-0.030	4.20	✓			
7.03	+/-0.030	7.03	✓			
0.750	+/-0.010	0.765	✓			
Ø0.080	+0.005/-0.000					

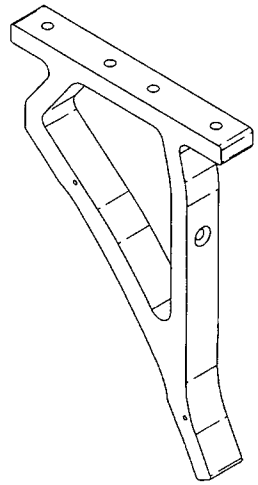
Measured by:	mm
Date:	14/04/15

Audited by:	SHP
Date:	14/4/16

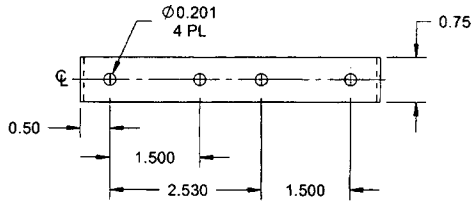
Preliminary Approval:	
Date:	

Rev	Date	Change	Revised by	Approved
A	11.10.13	New Issue	KJ	
B	13.05.08	Dimensions updated per Dwg Rev D	KJ	
C	13.10.18	Tolerances revised	KJ	





112319 MCS
1401-31



SECTION VIEW A-A D6-1

RELEASED
2012 -10- 31

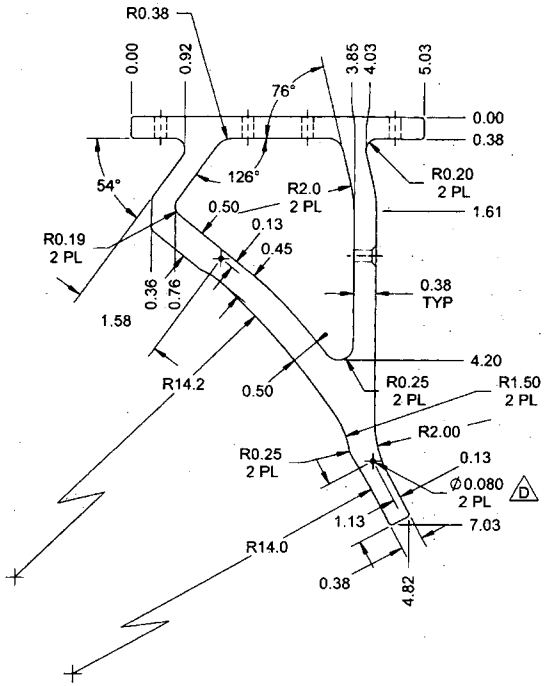
NOTES:
1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
OR 6061-T6/T62 ALUMINUM SHEET
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF DART SPEC. M6061T6B/M6061T6S
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.55 lbs

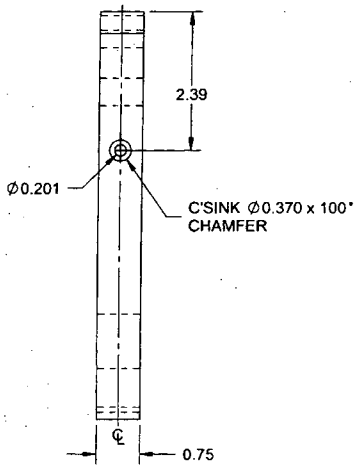
D4093-1 BRACKET

REV.	DESCRIPTION	BY	DATE
D	ADD Ø0.080 HOLES (ZN B5-2, B5-4)	RF	12.09.18
C	REDRAWN D4093-1/-3 (ZN B4-1, B4-2); ADD MATERIAL NOTES (ZN A8-1, A8-3, A8-5)	RF	11.07.27
B	REDRAWN D4093-1/-3 (ZN B4-1, B4-2)	RF	11.01.31
A	NEW ISSUE	RF	10.09.16

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	KENT, WA	
CHECKED		DRAWING NO. D4093	REV. D
MFG. APPR.			SHEET 1 OF 5
APPROVED		TITLE BRACKET	SCALE NTS
DE APPR.			
DATE	12.09.18		

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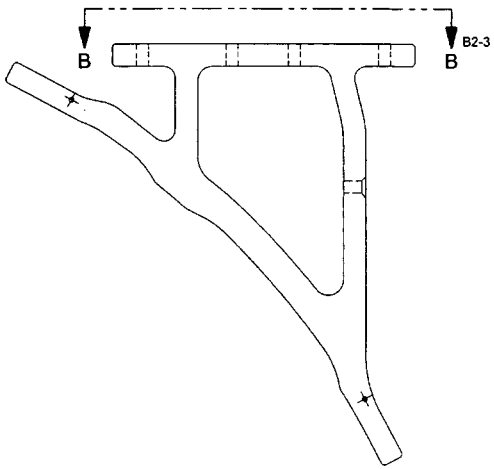


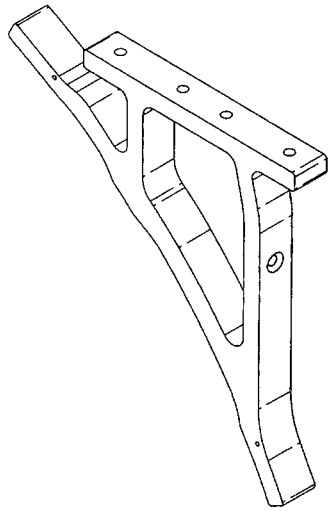


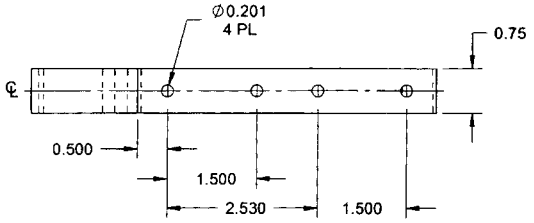
D4093-1 BRACKET

RELEASED
2012 -10- 31

DESIGN	RF	**DART AEROSPACE USA, INC.**	
DRAWN	RF	KENT, WA	
CHECKED		DRAWING NO. D4093	REV. D
MFG. APPR.			SHEET 2 OF 5
APPROVED		TITLE BRACKET	SCALE NTS
DE APPR.			
DATE 12.09.18		COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	







D4093-3 BRACKET

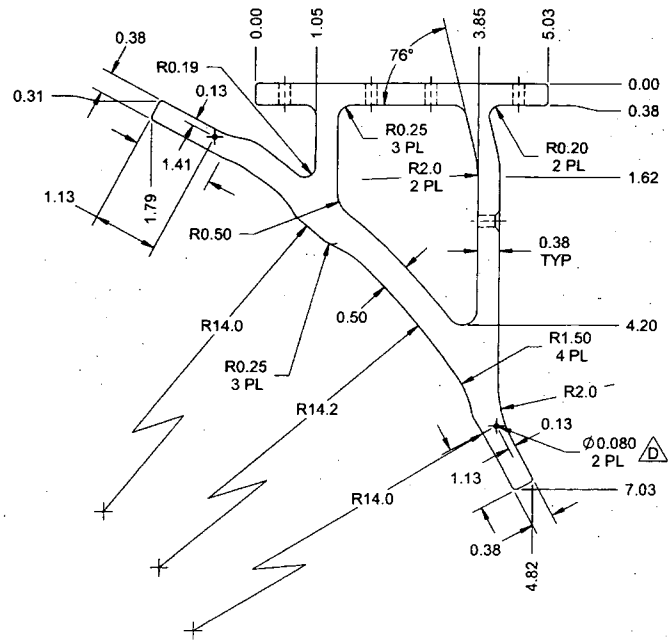
SECTION VIEW B-B B5-3

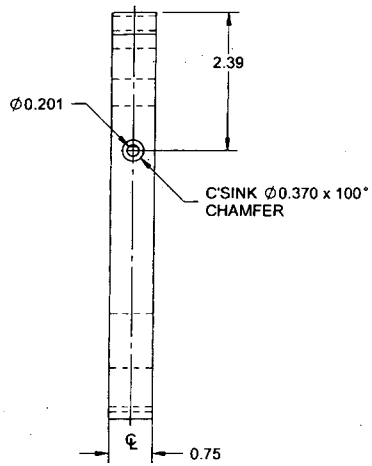
RELEASED
2012 -10- 31

NOTES:
1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
OR 6061-T6/T62 ALUMINUM SHEET
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF DART SPEC. M6061T6B/M6061T6S
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.64 lbs"

DESIGN	RF	DART AEROSPACE USA, INC. KENT, WA
DRAWN	RF	
CHECKED		DRAWING NO. D4093 REV. D SHEET 3 OF 5
MFG. APPR.		
APPROVED		TITLE BRACKET SCALE NTS
DE APPR.		
DATE	12.09.18	

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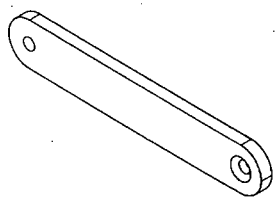


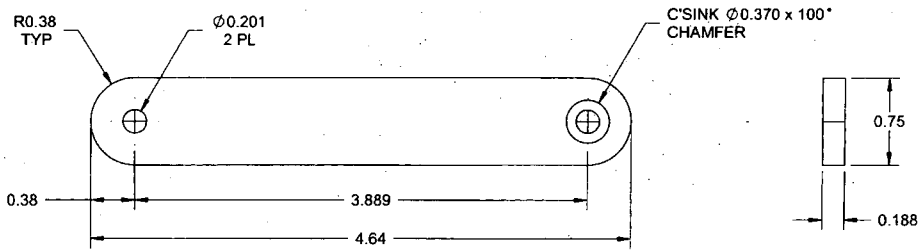
D4093-3 BRACKET

RELEASED
2012 -10- 31

DESIGN	RF	DART AEROSPACE USA, INC. KENT, WA
DRAWN	RF	
CHECKED		DRAWING NO. D4093 REV. D
MFG. APPR.		SHEET 4 OF 5
APPROVED		TITLE BRACKET SCALE NTS.
DE APPR.		
DATE	12.09.18	

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D4093-5 BRACKET

NOTES:
1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
OR 6061-T6/T62 ALUMINUM SHEET
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF DART SPEC. M6061T6B/M6061T6S
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.06 lbs

RELEASED
2012 -10- 31

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	RF	KENT, WA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D4093	SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		BRACKET	NTS
DATE	12.09.18		

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DART AEROSPACE LTD	Work Order:	112 319
Description: Bracket	Part Number:	D4093-1
Inspection Dwg: D4093 Rev: D		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø.201	+.005/-.001	.201	✓		SL08	VERN
.500	+/- .010	.498	✓		↓	
1.500	+/- .010	1.506	✓			
2.530	+/- .010	2.530	✓			
1.500	+/- .010	1.500	✓			
2.39	+/- .030	2.385	✓			
.370X100°	+/-.010 X .5°	.376X100°	✓		✓	

Measured by:		Audited by:	DA	DAS 08 9-89	Preliminary Approval:	
Date:	14-05-04	Date:	14/05/06		Date:	

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

DART AEROSPACE

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO23011

Purchase Order Date 2/14/2014
PO Print Date 2/14/2014

Order From : VC-LWC001

[illegible]OEBSACK WATERJET CANADA LTD.
[illegible] NORTHFIELD DR. E.
[illegible] O.BOX 339

WATERLOO, ONTARIO N2K 3T6

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone

Ship To Contact
Ship To Phone
Ship Via: FedEx PI collect
Ship Acct:

Buyer Michael Gregoire
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA – (Free Carrier)

Line Total: **$385.00**

[illegible]3319-1P	Forward Wearplate	3/28/2014 Yes 3/28/2014	20.00 Each	$7.50	$150.00

Manufacture as per Drawing D3319 rev.c
[illegible]112531

Line Total: **$150.00**

D4093-1P	Bracket	3/28/2014 Yes 3/28/2014	20.00 Each	$23.95	$479.00

Manufacture as per drawing D4093 rev.d
B112319

Line Total: **$479.00**

D4093-3P	Bracket	3/28/2014 Yes 3/28/2014	20.00 Each	$23.95	$479.00

Manufacture as per drawing D4093 rev.d
B110953

PO Instructions: PROCUREMENT QUALITY CLAUSES
A005 RIGHT OF ENTRY
A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE)
A012 CHEMICAL AND PHYSICAL TEST REPORTS
A016 PERSONNEL QUALIFICATION
A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A042 DART NOTIFICATION BY SUPPLIER

Note:

Loebsack WaterJET Canada Ltd.

55 Northfield Dr., E., Box 339
Waterloo, On. N2K 3T6
(519)570-6590
F. (519)893-4252

Certificate of Compliance

Sold To: DART Aerospace

Purchase Order Nu ID PO23011

Item	Quantity	Part Number	Revision	Description	Mtl. / Thk.	HT Number
18(4)	60	D3065-1	b	STEP SPACER	2024-T3 / 0.040"	663172A5
19(5)	100	D3065-3	b	STEP SPACER	2024-T3 / 0.040"	663172A5
21(7)	60	D3065-7	b	STEP SPACER	2024-T3 / 0.040"	663172A5
20(6)	110	D3065-5	b	STEP LEG	5052-H32 / 0.080"	3C5291
9(8)	20	D4093-1	d	BRACKET	6061-T6 / 0.750"	37797032
10(9)	10	D4093-3	d	BRACKET	6061-T6 / 0.750"	37797032
8(2)	20	D3319-1	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
7(1)	20	D3319-3	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
22(3)	120	D3537-1F	c	WEARPAD	304 SS / 0.063"	A1303988
11(10)	40	D3405-1F	b	GHW BRACKET	304 SS / 0.120"	350420

DAS 27 9-69 14/4/15

This is to certify that the whole of the supplies detailed hereon has been inspected, tested, packed, and unless otherwise stated, conform in all respects with the requirements of the contract or order.

Name: Derek Loebsack Title: President

Sign: Dated: 07-14-04

THYSSENKRUPP MATERIALS NA

J.M. WOODTURNING LTD
ALUMINUM PLATE 6061-T651
.750" THICK X 48.5000" X 96.5000"
PART NO.

PO/Rel FRED

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by:_____

Certificate of Mill Test Results

BL PEC-851084-001 19Nov13
Pg 1/1

TEST CERTIFICATE

HULAMIN

Certificate No : 1209LB2662

Hulamin Limited Reg.No. 1940/012934/06 VAT Reg No. 4080149614
HEAD OFFICE: Wayne Martin Rd, Pietermaritzburg 3201, P.O. Box 74, Pietermaritzburg 3200, South Africa
Telephone: +27 33 3556911 Telefax: +27 33 394 6325

BUYER:		
TA CHEN INTERNATIONAL INC 5855 ODISPO AVE LONG BEACH CA 90805	Hulamin Load No: HL012523 Lot No : 17/09/032C8 PAList No : 2/1161413 Release No : RE088556	Product : PLATE HEAT TREATED LINISHED, 6061-T651 0.75" x 48.5" x 96.5" Dimension : 0.75" X 48.5" X 96.5" Alloy - Temper : 6061 - T651
	Cust Order No : N03103-S HULAMIN Order No : 1817426 Item Part : 1/1	Certificate No : 1209LB2662 Cust Ref/Part No: Combined PAList No : R*2184

Cons No : PFV671

MECHANICAL TEST RESULTS

Lot No.	Cast No.	Metal Id	Alloy	Spec No	Mechanical Properties							
					Yield Strength (Ksi)	UTS (Ksi)	Elongation A50 (%)	Earing (%)	Test Date	Gauge Length (inches)	Bend Test	Actual Gauge (inches)
Spec				Min	35.1	42.0	9					0.75
				Max								0.781
17/09/032C8	VAST	37797032	6061	1	41.6	46.7	15		07/09/12	2		0.765
				2	41.6	46.7	15		07/09/12	2		0.764

CHEMICAL COMPOSITION

	Cast No.	Alloy	Si (%)	Fe (%)	Cu (%)	Mn (%)	Mg(%)	Cr(%)	Zn (%)	Ti (%)	Each(%)	Total(%)	Al(%)
Min			0.40		0.15		0.8	0.04					
Max			0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.15	
	VAST	6061	0.69	0.44	0.28	0.11	1.01	0.21	0.01	0.012			97.20

CONFORMS TO: ASME SB-209 ASTM B209-10 AMS 4027M AMS-QQA-250/11, 00.1997

For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM Practice E29, for Using Significant Digits in Test Data to Determine Conformance with Specifications.

WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE TERMS OF THE ORDER CONTRACT. THE INSPECTION RESULTS INDICATED IN THE CHEMICAL COMPOSITION HAVE BEEN OBTAINED FROM CAST ANALYSIS.

Dr A Pocock(HEAD OF CHEMICAL TESTING)

Ver1.0.1

V. Marken(HEAD OF PHYSICAL TESTING)

Printed Date: 19 Nov 2012

Page 1

MILL TEST REPORT
TA CHEN INTERNATIONAL, INC.
Customer: COPCON PO#:PEC-253613 SO#:PR6420
Item:.750x96x96 6061T651 Bundle:PFV671 Heat#:37797032
This MTR contains 1 page (Page#1)
MTR#:HLCLR181764_PFV671

JAS
27
1-89
14/4/15

KAISER ALUMINUM
FABRICATED PRODUCTS

Built in Quality

CERTIFIED TEST REPORT

http://Online.KaiserAluminum.com

Kaiser Aluminum
Trentwood Works
Spokane, WA 99215-5108
(800) 367-2586

CUSTOMER PO NUMBER:	WORK PACKAGE:	CUSTOMER PART NUMBER:	PRODUCT DESCRIPTION:
5400197766-20		ALFLR01581	HT Flat Sheet

KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	ALLOY:	CLAD:	TEMPER:
1160889	2	11/14/2013	2024	BARE	T3
WEIGHT SHIPPED:	**QUANTITY:**	**B/L NUMBER:**	**GAUGE:**	**WIDTH:**	**LENGTH:**
3293 LB	117 PCS EST.	2044959	0.0400 IN	48.000 IN	144.000 IN

SHIP TO:	SOLD TO:
COPPER & BRASS SALES 404 CENTURA COURT SPARTANBURG, SC 29303 US	COPPER & BRASS SALES ATTN: ACCOUNTS PAYABLE P.O. Box 5116 SOUTHFIELD, MI 48086 US

MHU 1730227: LOT 663172A5: 117 pieces

Certified Specifications

AMS 4037/RevP AMS-QQ-A-250/4/RevA ASTM B 209/Rev10 CMMP 019/RevD CMMP 025/RevU

Test Code: 1504

Test Results:

LOT: 663172A5 CAST: 641 DROP: 27 INGOT: 3

Melted in USA
(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T3	LT / 02 (Min:Max)	68.1 : 68.2 (470 : 470)	46.0 : 46.1 (317 : 318)	17.1 : 17.8

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
Actual	0.09	0.23	4.7	0.57	1.3	0.01	0.16	0.02	0.01	0.00	TOT	0.03

Chemistry:		SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
2024	MIN	0.00	0.00	3.8	0.30	1.2	0.00	0.00	0.00	0.00	0.00	MAX	0.05
	MAX	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder

Plant Serial: 4315340
Kaiser Order Number: 1160889
Line Item: 2

From: ThyssenKrupp Materials NA
Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673
CstAr CstOr 256039
Wgt.: 55.296 LB Date 02/20/2014

KAISER ALUMINUM
FABRICATED PRODUCTS

Built in Spokane

CERTIFIED TEST REPORT

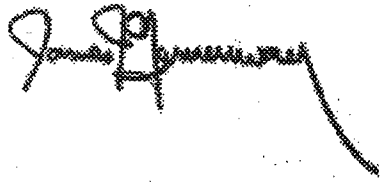
http://Online.KaiserAluminum.com

Kaiser Aluminum
Trentwood Works
Spokane, WA 99215-5108
(800) 367-2586

CERTIFICATION

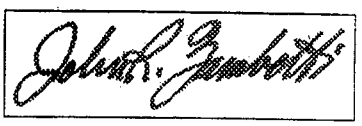
Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For materialthicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony underfederal law. ISO-9001:2000 certified.

JAMES HEMENWAY, LABORATORIES SUPERVISOR



Plant Serial: 4315340
Kaiser Order Number: 1160889
Line Item: 2

From: ThyssenKrupp Materials NA
Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673
CstAr CstOr 256039
Wgt.: 55.296 LB Date 02/20/2014



FORM: 1006 WORKORDER: 2402984673

COPPER AND BRASS SALES

MATERIAL TYPE

ALUMINIUM ALLOYS

PRODUCT DESIGNATION

2014 2024 2224 2324 7050 7075 7150 7175 7475 ALUMEC 89 ALUMEC 99 QC-7

"WARNING"

SMALL CHIPS,FINE TURNINGS AND DUST MAY IGNITE READILY.EXPLOSION POTENTIAL MAY BE PRESENT WHEN:DUST OR FINES ARE DISPERSED IN THE AIR; FINE, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH CERTAIN METAL OXIDES; OR,CHIPS,FINES,DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH WATER OR MOISTURE.KEEP AWAY FROM IGNITION SOURCE.USE EXPLOSION-PROOF VENTILATION.KEEP MATERIAL DRY.

THIS PRODUCT CONTAINS BERYLLIUM AND COPPER.INHALING BERYLLIUM DUST OR FUMES MAY CAUSE CHRONIC BERYLLIUM DISEASE (CBD),A SERIOUS CHRONIC LUNGDISEASE IN SOME INDIVIDUALS.BERYLLIUM IS A CANCER HAZARD;OVER TIME CBDAND CANCER CAN BE FATAL,TARGET ORGAN IS PRIMARILY THE LUNG.INHALING LARGE AMOUNTS OF COPPER,MAGNESIUM OXIDE,MANGANESE OXIDE,ANDZINC OXIDE FUMES OR DUST MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS.CHRONIC OVEREXPOUSURE TO COPPER MAY CAUSE THICKENING OF THE SKIN;AND SKIN,TEETH,AND HAIR DISCOLORATION.CHRONIC OVEREXPOUSURE TOMANGANESE DUST CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE,SCARRING OF THELUNGS AND REPRODUCTIVE HARM IN MALES.TARGET ORGAN IS PRIMARILY THE LUNG,BUT REPEATED HIGH EXPOSURE CAN ALSO AFFECT THE LIVER.CHRONICOVEREXPOSURE TO IRON OXIDE DUST/FUME MAY CAUSE LUNG SIDEROSIS. CHRONIC OVEREXPOSURE TO SILICON DUST CAN CAUSE CHRONIC BRONCHITIS.OVEREXPOSURE TO AMORPHOUS SILICA CAN CAUSE DRYING OF THE MUCOUSMEMBRANES OF THE EYES,NOSE,AND THROAT.

THIS PRODUCT ALSO CONTAINS NICKEL AND CHROMIUM COMPOUNDS.INHALATION OF NICKEL DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACTAND CAUSE NASAL AND/OR LUNG CANCER.NICKEL HAS BEEN IDENTIFIED AS A POTENTIAL HUMAN CARCINOGEN.EXPOSURE TO CHROMIUM DUST OR FUMES MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE.UNDER HIGH TEMPERATURES,HEXAVALENT CHROMIUM MAY BE PRODUCED,IF IN THEINSOLUBLE FORM,IT IS A CONFIRMED HUMAN CARCINOGEN.(CALIFORNIA PROPOSITION 65).

IF COATED WITH OIL,MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT.WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.
READ THE ALUMINIUM/ALUMINIUM ALLOYS MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL.

* If processing or recycling produces particulate,use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding,grinding,abrasive sawing,sanding and polishing.Any activity which abrades the surface of this material can generate airborne particulate.Use appropriate NIOSH approved respiratory protection (P95; P100 for lead with, quantitative fit testing required) if exposures exceed the permissible limits.
* The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.
* Aluminum, in solid form and as contained in finished products presents no special health risk.
* Sold for manufacturing purposes only.This product can be recycled; contact your sales representative.

For additional information, call or write to Copper and Brass Sales,22355 West Eleven Mile Road, Southfield, MI 48033,telephone248-233-5600, or visit our web site @ www.copperandbrass.com.

ALUMINUM LABEL NO. 300-1056 ISSUED 10/01/2008

ADITYA BIRLA
HINDALCO INDUSTRIES LIMITED
Jeevan Deep Building, 1 Prafulla Chandra Sen Sarani,
Kolkata-700071, India. Tel:+91-33-22402210
Fax: +91-33-22884808
Regd. Office: Century Bhavan, Dr. Annie Besant Road, Worli,
Mumbai - 400 025, INDIA.

Date 20-SEP-13

NAME OF THE PARTY : RYERSON CANADA INC.,161 THE WEST MALL,TORONTO, ONTARIO M9C4V8,,CANADA,,

PRODUCT : ALUMINIUM SHEET.

QTY (MT) : 20.923

LC/NO.& DATE : 64687167 Dt. 20.08.2013

INVOICE NO : HRB/R/2014/72

COPY

THE TEST RESULTS OF THE SAMPLES DRAWN AND TESTED IN OUR LABORATORY ARE AS FOLLOWS :

QUALITY CERTIFICATE

SRNO	Package No	Alloy Temper	Net Wt (MT)	Size (mm)	Coil Nos.	Cast No./Heat No.
1	7173801B4	AA5052 , H32	1.487	3048 X 1219 X 2.29	H13HASH0805002	7173801B4
2	2D0192B01B4	AA5052 , H32	1.508	3048 X 1524 X 2.54	H13HASH0819010	2D0192B01B4
3	3C530B4	AA5052 , H32	1.487	2438 X 1219 X 2.03	H13HASH0805017	3C530B4
4	2D0192B01B5	AA5052 , H32	1.503	3048 X 1524 X 2.54	H13HASH0819010	2D0192B01B5
5	3C530B7	AA5052 , H32	1.487	2438 X 1219 X 2.03	H13HASH0805017	3C530B7
6	7173801B5	AA5052 , H32	1.511	3048 X 1219 X 2.29	H13HASH0805002	7173801B5
7	7172903B4	AA5052 , H32	1.488	3048 X 1219 X 2.29	H13HASH0805001	7172903B4
8	7172903B2	AA5052 , H32	1.485	3048 X 1219 X 2.29	H13HASH0805001	7172903B2
9	2D0193A01B2	AA5052 , H32	1.47	3048 X 1524 X 2.54	H13HASH0819011	2D0193A01B2
10	7173801B2	AA5052 , H32	1.487	3048 X 1219 X 2.29	H13HASH0805C02	7173801B2

CHEMICAL COMPOSITION (%)

	Cast No	Si	Fe	Mn	Mg	Cu	Zn	Cr	Ti	B	Sr	Ni	Pb	V	Sn	Bi	Others	Nom. Alum.
1	7173801B4	.081	.216	.006	2.365	.001	0	0	.005	0	0	0	.001	0	0	0		97.121
2	2D0192B01B4	.133	.285	.041	2.413	.01	0	0	.02	0	0	0	.005	0	0	0		96.887
3	3C530B4	.2	.49	.137	2.6	.009	0	0	.013	0	0	0	0	0	0	0		96.397
4	2D0192B01B5	.133	.285	.041	2.413	.01	0	0	.02	0	0	0	.005	0	0	0		96.887
5	3C530B7	.2	.49	.137	2.6	.009	0	0	.013	0	0	0	0	0	0	0		96.397
6	7173801B5	.081	.216	.006	2.365	.001	0	0	.006	0	0	0	.001	0	0	0		97.123
7	7172903B4	.105	.262	.003	2.528	.001	0	0	.006	0	0	0	.001	0	0	0		96.873
8	7172903B2	.105	.262	.003	2.528	.001	0	0	.006	0	0	0	.001	0	0	0		96.873
9	2D0193A01B2	.124	.301	.036	2.367	.016	0	0	.02	0	0	0	.005	0	0	0		96.83
10	7173801B2	.081	.216	.006	2.365	.001	0	0	.006	0	0	0	.001	0	0	0		97.123

MECHANICAL PROPERTIES

OTHER TESTS

	Cast No	UTS(Kg/mm2)	YS (Kg/mm2)	% Elongation	Bend Test
1	7173801B4	24.9	0	11.2	0 T Satisfactory
2	2D0192B01B4	23.2	0	10.6	0 T Satisfactory
3	3C530B4	22.9	0	9.5	0 T Satisfactory
4	2D0192B01B5	23.2	0	10.6	0 T Satisfactory
5	3C530B7	22.9	0	9.5	0 T Satisfactory
6	7173801B5	24.5	0	11.2	0 T Satisfactory
7	7172903B4	23.4	0	10.6	0 T Satisfactory
8	7172903B2	23.4	0	10.6	0 T Satisfactory
9	2D0193A01B2	22.6	0	11.8	0 T Satisfactory
10	7173801B2	24.5	0	11.2	0 T Satisfactory

Remarks:- (1) RYERSON PO NO.735870 (2) ISSUED BY THE MANUFACTURER.

FOR HINDALCO INDUSTRIES LIMITED

AUTHORISED SIGNATORY

2/2

ADITYA BIRLA HINDALCO INDUSTRIES LIMITED

Jeevan Deep Building, 1 Prafulla Chandra Sen Sarani,
Kolkata-700071, India. Tel:+91-33-22402210
Fax: 491-33-22884808
Regd. Office: Century Bhavan, Dr. Annie Besant Road, Worli,
Mumbai - 400 025, INDIA.

Date: 20-SEP-13

NAME OF THE PARTY : RYERSON CANADA INC.,161 THE WEST MALL,TORONTO, ONTARIO M9C4V8,,CANADA,,

PRODUCT : ALUMINIUM SHEET.

QTY (MT) : 20.923

LC/NO.& DATE : 64687167 Dt. 20.08.2013

INVOICE NO : HRB/R/2014/72

COPY

QUALITY CERTIFICATE

SRNO	Package No	Alloy Temper	Net Wt (MT)	Size (mm)	Coil Nos.	Cast No./Ingot No.
11	3C530#6	AA5052 , H32	1.486	2438 x 1219 x 2.03	H13HA5H0805017	3C530#6
12	3C52981	AA5052 , H32	1.517	2438 x 1219 x 2.03	H13HA5H0905018	3C52981
13	2D0192B01#2	AA5052 , H32	1.502	3048 x 1524 x 2.54	H13HA5H0819010	2D0192B01#2
14	2D0193A01#5	AA5052 , H32	1.505	3048 x 1524 x 2.54	H13HA5H0819011	2D0193A01#5
		Total-	20.923			

CHEMICAL COMPOSITION (%)

	Cast No	Si	Fe	Mn	Mg	Cu	Zn	Cr	Ti	B	Sr	Ni	Pb	V	Ga	Bi	Others	Rem. Alum.
11	3C530#6	.2	.49	.137	2.6	.005	0	0	.013	0	0	0	0	0	0	0		96.397
12	3C52981	.2	.49	.137	2.6	.005	0	0	.013	0	0	0	0	0	0	0		96.397
13	2D0192B01#2	.153	.283	.041	2.613	.01	0	0	.02	0	0	0	.005	0	0	0		96.807
14	2D0193A01#5	.154	.301	.056	2.367	.015	0	0	.02	0	0	0	.005	0	0	0		96.88

MECHANICAL PROPERTIES

	Cast No	UTS(Kg/mm2)	PS (Kg/mm2)	% Elongation	Bend Test	OTHER TESTS
11	3C530#6	22.9	0	9.5	0 T Satisfactory	
12	3C52981	22.4	0	10	0 T Satisfactory	
13	2D0192B01#2	23.2	0	10.6	0 T Satisfactory	
14	2D0193A01#5	22.6	0	11.8	0 T Satisfactory	

Remarks:- (1) RYERSON PO NO.736670 (2) ISSUED BY THE MANUFACTURER.

FOR HINDALCO INDUSTRIES LIMITED

AUTHORISED SIGNATORY

ESSAR STEEL

ESSAR STEEL ALGOMA INC.,105 West Street, Sault Ste. Marie,Ontario, Canada P6A 7B4

SO No.,Item & Date.: 8017177 000020 2014/01/09	**Shipment No.& Date.:** 1000083594 2014/01/10	**TC No., Date & Time :** ESA-128192 2014/01/12 - 08:41:14
Sold to Customer Name and Address :	**Ship to Customer Name and Address:**	**Customer PO NO./Item:** 744335 / 2
RYERSON INC	RYERSON INC	**BOL NO.:** 1000083594
FINANCIAL DRIVE 7525	FINANCIAL DRIVE 7525	**Cust.Part No.:** 7804-2405
BRAMPTON,Ontario,Canada	BRAMPTON,Ontario,Canada	**Carrier :** NATIONAL TRANSPORTATION - 1158A
L6Y 5P4	L6Y 5P4	

Customer Specification : CR STEEL SHEET Carbon CQ / CS ASTM A1008 CS TY B (2012) Mark Number 7804-2405 Batch Annealed Top Semi Critical Surface Improved Shape Pickled Light Oiled Light Matte Finish Edge Sealant Required Std Thickness Tol

Supplementary Instructions : Test Cert 1:905-792-1617

Insp T/R : Chemical Analysis **Cust Use :** AUTO IMPROVED SHAPE &SURF

ESSAR STEEL ALGOMA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES.
THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ESSAR STEEL ALGOMA INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-4095 FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF DOCUMENT.

MEETS EN 10204 3.1
ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGOMA.COM

ALL HEATS FULLY KILLED.
HEATS INDICATED WITH (*) FINE GRAINED.
HEATS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS.

Dimensions (T x W x L)	Batch No.	Heat No-MS	Quantity	Pcs
0.0440 " x 48.000 "	SAM9918B	3683T3-51	21,740 LB	1

CHEMICAL PROPERTIES

Heat No. (wt%)	C	Mn	P	S	Si	Cr	Ni	Cu	Mo	Al	Nb	V	B	Ti	N
3683T3* +	0.04	0.26	0.003	0.007	0.020	0.01	0.01	0.01	0.00	0.035	0.000	0.000	0.0000	0.001	0.0033

K. UGHADPAGA

MANAGER METALLURGICAL SERVICES

WARNING THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.

THYSSENKRUPP MATERIALS NA

Certificate of Mill Test Results

BL PEC-000000-000

Pg 1/1

PO/Rel

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by:_____

Attn: RICK

PART NO.

NO. 8465 P. 2

FEB. 28. 2014 3:46PM MATERIAL

产品质量证明书
MATERIAL TEST CERTIFICATE

无锡宝昌金属制品有限公司
Wuxi Baochang Metal Products Co.,Ltd
PAGE 2 OF 2

单号码: EX1309301QS
Order No.

品名: STAINLESS STEEL SHEETS, SLIT EDGE
Commodity

牌号: 304
Type

编号: EX1309301
Invoice No.

货方: GLOBAL STAINLESS STEEL INC.
Order

表面加工: 2B
Surface Finish

发行日期: 2013-10-26
Date

用户: GLOBAL STAINLESS STEEL INC.
CONSIGNEE

标准: ASTM A240/A240M
Specification

序号 No.	货物编号 Product No.	产品尺寸 Product Size 厚度 Thickness MM	宽度 Width MM	长度 Length MM	数量 Number	重量 Weight Kg	拉伸试验 Tensile Test 屈服强度 0.2% YS N/mm²	抗拉强度 TS N/mm²	延伸率 EL %	表面硬度 Hardness HRB	炉批号 HEAT NO.	化学成分 Chemical Composition (%) C	Si	Mn	P	S	Ni	Cr	N
12	13102612	0.6096	1219.2	2438.4	118	1612	250	690	57	83	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
13	13102613	0.6096	1219.2	2438.4	118	1616	250	690	57	83	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
14	13102614	0.7620	1219.2	2438.4	88	1644	271	665	58	89.5	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
15	13102615	0.7620	1219.2	2438.4	87	1626	271	665	58	89.5	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
16	13102616	1.2192	1219.2	2438.4	54	1494	267	695	55	87	A1303987	0.0400	0.550	1.1000	0.0330	0.0010	8.0200	18.160	0.0400
17	13102617	1.2192	1219.2	2438.4	50	1378	267	695	55	87	A1303987	0.0400	0.550	1.1000	0.0330	0.0010	8.0200	18.160	0.0400
18	13102618	1.2192	1219.2	3048	42	1460	267	695	55	87	A1303987	0.0400	0.550	1.1000	0.0330	0.0010	8.0200	18.160	0.0400
19	13102619	1.2192	1219.2	3048	45	1574	267	695	55	87	A1303987	0.0400	0.550	1.1000	0.0330	0.0010	8.0200	18.160	0.0400
20	13102620	1.5240	1219.2	2438.4	43	1485	271	680	52	87	A1303988	0.0400	0.430	1.1300	0.0380	0.0010	8.0300	18.230	0.0300
21	13102621	1.5240	1219.2	2438.4	43	1487	271	680	52	87	A1303988	0.0400	0.430	1.1300	0.0380	0.0010	8.0300	18.230	0.0300
22	13102622	1.9050	1219.2	2438.4	40	1725	268	650	53	84	A2304006	0.0300	0.440	1.1500	0.0380	0.0010	8.1000	18.250	0.0400
23	13102623	1.9050	1219.2	2438.4	41	1755	268	650	53	84	A2304006	0.0300	0.440	1.1500	0.0380	0.0010	8.1000	18.250	0.0400
24	13102624	3.0480	1219.2	3048	17	1482	280	675	54	84	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
25	13102625	3.0480	1219.2	3048	19	1656	280	675	54	84	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400

备注（Remarks）：
1. 尺寸和表面：合格
Size and Surface : Guaranteed

兹证明所列产品均符合订单和标准的制造要求

WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ORDER AND SPECIFICATION

*此报告仅可完全复制
*The report can only be copied completely

技术本部
TECHNICAL DEPT.

无锡宝昌金属制品有限公司
WUXI BAOCHANG METAL PRODUCTS CO.,LTD.

Doc No. 173953 Indexed 12Dec13 by sissup1

THYSSENKRUPP MATERIALS NA

Certificate of Mill Test Results

PO/Rel

BL PEC-000000-000

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by: _____ Pg 1/1

Attn: RICK

PART NO.

18446

ThyssenKrupp Stainless USA

INSPECTION CERTIFICATE
CERTIFICADO DE INSPECCION
ABNAHMEPRÜFZEUGNIS
according to / de acuerdo con / nach
EN 10204-3.1

0000032224 /

1 / 1

1 ThyssenKrupp Drive; P.O. Box 13000; Calvert, AL 36513-1300

CLIENT METALS SALES LIMITED
999 DERRY ROAD EAST SUITE 305
MISSISSAUGA ON L5T 2J8
CANADA

CLIENT METALS SALES LIMITED, MISSISSAUGA

TO-1846

001147789 / 001

85228223 / 010

SHEET/BLUASPLECH

ASTM A240/A240M, ASME SA-240 Ed.R Part A Ed.2010
ASTM A480/A480M, ASME SA-480 Ed.R Part A Ed.2010

TYPE 304/304

3.05 mm x 1,219.20 mm x 2,438.40 mm
0.1200 Inch x 48.0000 Inch x 96.0000 Inch

A00

60512015	32	4,490 lb / 2,218 kg	713000	560420	1000088630	1000088632
60512017	32	4,886 lb / 2,216 kg	713000	560420	1000088630	1000088632
	64	9,776 lb / 4,434 kg				

		% C	% Si	% Mn	% P	% S	% Cr	% Ni	% N
560420	07A	0.0026	0.50	1.66	0.027	0.0018	18.05	8.09	0.060

TRANSVERSE

	YS0.2% PSI / MPa	TS PSI / MPa	EL A5" %	HRB
1000088630	45,400 / 302	83,111 / 642	55.0	82
1000088632	43,946 / 305	85,131 / 643	56.1	82

OK
OK

No weld repairs
No intentional additions of Mercury compounds were made or used
Free of radioactive contamination
EU RoHS Directive 2002/95/EC Compliant
Country of Melt as per ISO 3166-1

ThyssenKrupp Stainless USA, LLC
An ISO 9001:2008 certified company

Authorized Signature
Phone: +1 251 829 3402

19/12/2012

Doc No. 160529 Indexed 5Jun13 by slasupl

Loebsack WaterJET Canada Ltd.

55 Northfield Dr., E., Box 339
Waterloo, On. N2K 3T6
(519)570-6590
F. (519)893-4252

Certificate of Compliance

Sold To: DART Aerospace

Purchase Order Nu ID PO23011

Item	Quantity	Part Number	Revision	Description	Mtl. / Thk.	HT Number
18(4)	60	D3065-1	b	STEP SPACER	2024-T3 / 0.040"	663172A5
19(5)	100	D3065-3	b	STEP SPACER	2024-T3 / 0.040"	663172A5
21(7)	60	D3065-7	b	STEP SPACER	2024-T3 / 0.040"	663172A5
20(6)	110	D3065-5	b	STEP LEG	5052-H32 / 0.080"	3C5291
9(8)	20	D4093-1	d	BRACKET	6061-T6 / 0.750"	37797032
10(9)	10	D4093-3	d	BRACKET	6061-T6 / 0.750"	37797032
8(2)	20	D3319-1	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
7(1)	20	D3319-3	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
22(3)	120	D3537-1F	c	WEARPAD	304 SS / 0.063"	A1303988
11(10)	40	D3405-1F	b	GHW BRACKET	304 SS / 0.120"	350420

This is to certify that the whole of the supplies detailed hereon has been inspected, tested, packed, and unless otherwise stated, conform in all respects with the requirements of the contract or order.

Name: Derek Loebsack Title: President

Sign: Dated: 07-14-04